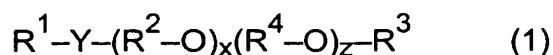


WHAT IS CLAIMED IS:

1. The use of polymers, which can be prepared by radical  
 5 copolymerization of  
 A) acrylamidopropylmethylenesulfonic acid (AMPS) and/or its salts;  
 B) one or more macromonomers comprising  
     i) a terminal group which is capable of polymerizing and which  
        is at least partially soluble in the reaction medium,  
 10     ii) a hydrophobic part which is hydrogen or a saturated or  
        unsaturated, linear or branched, aliphatic, cycloaliphatic or  
        aromatic (C<sub>1</sub>-C<sub>100</sub>)-hydrocarbon residue, and  
    iii) optionally a hydrophilic part based on polyalkylene oxides;  
        and  
 15 D) optionally one or more additional at least mono- or polyolefinically  
        unsaturated oxygen-, nitrogen-, sulfur-, phosphorus-, chlorine-  
        and/or fluorine-comprising comonomers,  
        as crystallization inhibitor in plant protection formulations.
- 20 2. The use as claimed in claim 1, the comonomer A) being the sodium  
        salt and/or ammonium salt of acrylamidopropylmethylenesulfonic acid  
        (AMPS).
- 25 3. The use as claimed in claim 1 and/or 2, the macromonomers B)  
        being those according to formula (1)



in which

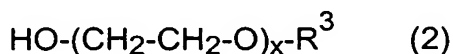
- 30  $R^1$  is a vinyl, allyl, acryloyl, methacryloyl, seneciroyl or crotonyl  
        residue;  
 $R^2$  and  $R^4$  are, independently of one another, (C<sub>2</sub>-C<sub>4</sub>)-alkylene;  
 $x$  and  $z$  are, independently of one another, an integer between 0 and  
        500, preferably with  $x + z$  greater than or equal to 1;  
 $Y$  is O, S, PH or NH, preferably O; and  
 35  $R^3$  is hydrogen or a saturated or unsaturated, linear or branched,  
        aliphatic, cycloaliphatic or aromatic (C<sub>1</sub>-C<sub>100</sub>)-hydrocarbon

residue, preferably (C<sub>1</sub>-C<sub>30</sub>)-hydrocarbon residue.

4. The use as claimed in claim 3,  
 $R^1$  being an acryloyl or methacryloyl residue;  
 5  $R^2$  and  $R^4$  being, independently of one another, C<sub>2</sub>-alkylene or C<sub>3</sub>-alkylene;  
 $x$  and  $z$  being, independently of one another, an integer between 0 and 50, preferably with  $x + z$  greater than or equal to 1;  
 $R^3$  being an aliphatic (C<sub>4</sub>-C<sub>22</sub>)-alkyl or -alkenyl residue,  
 10 preferably (C<sub>10</sub>-C<sub>22</sub>)-alkyl or -alkenyl residue;  
 a phenyl residue;  
 a (C<sub>1</sub>-C<sub>22</sub>)-alkylphenyl residue, preferably sec-butyl- or n-butyl-alkylphenyl residue;  
 a poly((C<sub>1</sub>-C<sub>22</sub>)-alkyl)phenyl residue, preferably tris(sec-butyl)phenyl residue and tris(n-butyl)phenyl residue; or  
 15 a polystyrylphenyl residue, preferably tristyrylphenyl residue.

5. The use as claimed in claim 4, the  $R^3$  residue being a 2,4,6-tris(sec-butyl)phenyl residue or 2,4,6-tris(1-phenylethyl)phenyl residue.  
 20

6. The use as claimed in claim 1, the polymers being able to be prepared by radical copolymerization of  
 A) acrylamidopropylmethylenesulfonic acid (AMPS), the sodium salt of acrylamidopropylmethylenesulfonic acid (AMPS) and/or the  
 25 ammonium salt of acrylamidopropylmethylenesulfonic acid, preferably the ammonium salt of acrylamidopropylmethylenesulfonic acid (AMPS);  
 B) one or more macromonomers chosen from the group of the esters formed from methacrylic acid or acrylic acid, preferably methacrylic  
 30 acid, and compounds of the formula (2)

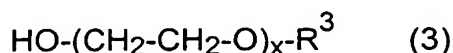


- in which  $x$  is a number between 0 and 50, preferably 1 and 50,  
 35 particularly preferably 5 and 30, and  
 $R^3$  is a (C<sub>10</sub>-C<sub>22</sub>)-alkyl residue; and  
 C) optionally one or more comonomers chosen from the group

consisting of acrylamide, vinylformamide, N-vinylmethacetamide, sodium methallylsulfonate, hydroxyethyl methacrylate, acrylic acid, methacrylic acid, maleic anhydride, methacrylamide, vinyl acetate, N-vinylpyrrolidone, vinylphosphonic acid, styrene, styrenesulfonic acid (Na salt), t-butyl acrylate and methyl methacrylate.

7. The use as claimed in at least one of claims 1 to 6, the macromonomers B) being esters formed from acrylic acid or methacrylic acid and alkyl ethoxylates chosen from the group of the
- (C<sub>10</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 8 EO units,
  - C<sub>11</sub>-oxo alcohol polyglycol ethers with 8 EO units,
  - (C<sub>12</sub>-C<sub>14</sub>)-fatty alcohol polyglycol ethers with 7 EO units,
  - (C<sub>12</sub>-C<sub>14</sub>)-fatty alcohol polyglycol ethers with 11 EO units,
  - (C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 8 EO units,
  - (C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 15 EO units,
  - (C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 11 EO units,
  - (C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 20 EO units,
  - (C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 25 EO units,
  - (C<sub>18</sub>-C<sub>22</sub>)-fatty alcohol polyglycol ethers with 25 EO units,
  - iso(C<sub>16</sub>-C<sub>18</sub>)-fatty alcohol polyglycol ethers with 25 EO units and/or
  - C<sub>22</sub>-fatty alcohol polyglycol ethers with 25 EO units.

8. The use as claimed in claim 1, the polymers being able to be prepared by radical copolymerization of
- A) acrylamidopropylmethylenesulfonic acid (AMPS), the sodium salt of acrylamidopropylmethylenesulfonic acid (AMPS) and/or the ammonium salt of acrylamidopropylmethylenesulfonic acid, preferably the ammonium salt of acrylamidopropylmethylenesulfonic acid (AMPS);
  - B) one or more macromonomers chosen from the group of the esters formed from methacrylic acid or acrylic acid, preferably methacrylic acid, and compounds of the formula (3)



35

in which

x is a number between 0 and 50, preferably 1 and 50, particularly

preferably 5 and 30, and

$R^3$  is a poly((C<sub>1</sub>-C<sub>22</sub>)-alkyl)phenyl residue, preferably tris(sec-butyl)phenyl residue and tris(n-butyl)phenyl residue, particularly preferably 2,4,6-tris(sec-butyl)phenyl residue, or a tris(styryl)phenyl residue, preferably 2,4,6-tris(1-phenylethyl)phenyl residue; and

- 5 C) optionally one or more comonomers chosen from the group consisting of acrylamide, vinylformamide, N-vinylmethylacetamide, sodium methallylsulfonate, hydroxyethyl methacrylate, acrylic acid, methacrylic acid, maleic anhydride, methacrylamide, vinyl acetate, 10 N-vinylpyrrolidone, vinylphosphonic acid, styrene, styrenesulfonic acid (Na salt), t-butyl acrylate and methyl methacrylate.

9. The use as claimed in at least one of claims 1 to 8, the proportion of macromonomers B) in the polymers being 50.1 to 99.9% by weight, 15 preferably 70 to 95% by weight, particularly preferably 80 to 94% by weight.

10. The use as claimed in at least one of claims 1 to 8, the proportion of macromonomers B) in the polymers being 0.1 to 50% by weight, preferably 5 to 25% by weight, particularly preferably 6 to 20% by weight. 20

11. The use as claimed in at least one of claims 1 to 9, the number-average molecular weight of the polymers being 1000 to 20 000 000 g/mol, preferably 20 000 to 5 000 000 g/mol, particularly preferably 50 000 to 1 500 000 g/mol. 25

12. The use as claimed in at least one of claims 1 to 11, the polymers being crosslinked.

13. The use as claimed in at least one of claims 1 to 12, the copolymerization being a precipitation polymerization, preferably in tert-butanol. 30

14. The use as claimed in at least one of claims 1 to 13, the plant protection formulations, based on the finished formulations, comprising 0.01 to 10% by weight, preferably 0.1 to 7% by weight, particularly preferably 0.5 to 5% by weight, polymers. 35

15. The use as claimed in at least one of claims 1 to 14, the plant

protection formulations comprising, as pesticidal active substances, one or more substances chosen from herbicides, insecticides, fungicides, acaricides, bactericides, molluscicides, nematocides and rodenticides.

- 5    16.    The use as claimed in claim 15, the pesticidal active substances being sulfonates, anilides, phenylurea derivatives, azoles, triazines, propionic acid derivatives, carbamates, pyrazolines, tebuconazole, hexaconazole, phenmedipham, desmedipham, linuron and/or trifluralin.
- 10   17.    The use as claimed in at least one of claims 1 to 16, the plant protection formulations being emulsifiable concentrates (EC), oil-in-water emulsions (EW), water-in-oil emulsions, suspension concentrates (SC), suspoemulsions (SE), suspensions, microemulsions (ME) or dispersions.
- 15   18.    The use as claimed in claim 17, the plant protection formulations being emulsifiable concentrates (EC) or suspension concentrates (SC).
- 20   19.    The use as claimed in at least one of claims 1 to 16, the plant protection formulations being those obtained by diluting emulsifiable concentrates (EC), oil-in-water emulsions (EW), water-in-oil emulsions, suspension concentrates (SC), suspoemulsions (SE), suspensions, microemulsions (ME) or dispersions with water and/or solvents, preferably water.
- 25   20.    The use as claimed in claim 19, the plant protection formulations being those obtained by diluting emulsifiable concentrates (EC) or suspension concentrates (SC) with water and/or solvents, preferably water.